WHAT IS CLAIMED IS:

1. A system for performing a white balance procedure for an electronic camera, comprising:

a light diffusion filter that acts as an illuminance integrator of broad light acceptance angle in photographic and scientific applications, said light filter being adapted to be attached over the lens of a digital camera-type device to permit adjustment of the camera controls either manually or automatically to generate an approximately 18% neutral density full-frame reference image of uniform consistency that will provide an accurate method for achieving optimum 18% exposure levels with incident light and digital gray/white balance with incident or reflective light, in camera or post processed, in view of the incident or reflective light conditions that exist at the time the picture is taken, and to enable later production of a computer-generated image with minimal colorcast and requiring minimal subsequent manual color adjustment.

2. The system of claim 1 wherein said light diffusion filter is combined with other color-altering filters enables the creation of a digital white balance with a desired colorcast inside the camera thereby enabling first-generation images possessing white balance that has been corrected at point of capture with the preferred colorcast.

3. The system of claim 1 wherein images created with said light diffusion filter also function as a key gray/white balance standard reference to create and preserve a near identical white balance throughout all stages of a digital imaging process.

4. The system of claim 1 wherein said light diffusion filter enables a referencing of an entire archive to a single constant neutral density reference, thereby enabling unlimited repeatable consistent and accurate color reproduction in a color managed environment.

5. The system of claim 1 wherein a consistency possible in manufacturing of said light diffusion filter enables creating unrelated archives containing digital image files of various color casts derived from multiple sources to be referenced to a same identical gray/white balance standard reference.

6. The system of claim 1 wherein said light diffusion filter functions either as a lens cap or is incorporated into a body of said electronic camera to be inserted automatically into a path of light entering through a lens assembly, thereby enabling diffused white balance data to be captured automatically for every exposure, or selected manually to document lighting conditions relevant to a specific sequence of images.

7. The system of claim 1 wherein significant elements of said light diffusion filter described above are incorporated as part of an independent window in a camera body associated with an electronic camera device that captures image data using an image sensor device to enable a white balance analysis based on light samples that have been collected, diffused and averaged to create a single uniform reference image that accurately represents a sum of all available light contributing to a photographic image, with each light source represented in correct proportions.